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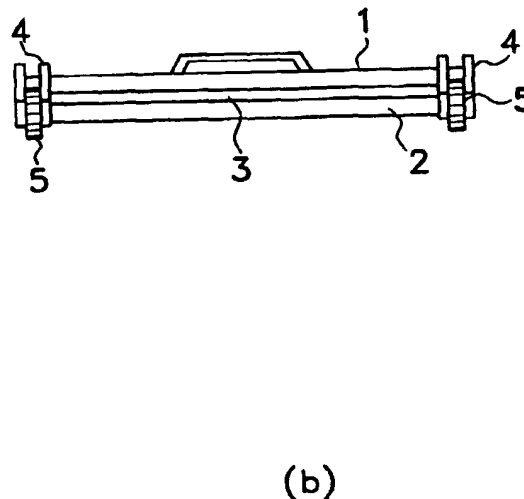
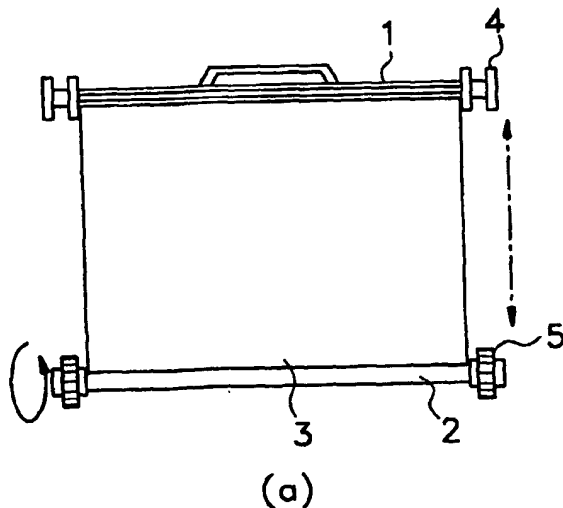
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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: WALL ROLL-UP SCREEN



(57) Abstract: The device relates to a wall roll-up screen of which the upper and the lower are attached with the upper short rod and the lower short rod, respectively, wherein the screen is constituted to be rolled up when not in use and to be unrolled when used, by the lower short rod; and the left and the right end of the upper short rod are mounted with steel structure of groove shaped ringscapable of coupling magnets and the left and the right end of the lower short rod are mounted with magnets to allow them to be coupled with the groove shaped rings of the left end and the right end of the upper short rod, upon rolling up the screen by the lower short rod and, if necessary, separating the magnets from the groove shape rings, thereby to obtain good portability and mobility of the screen, to prevent the screen from being twisted from side to side upon fixing the screen, and to improve aesthetic value of product.

## **WALL ROLL-UP SCREEN**

### **5 TECHNICAL FIELD**

The present invention relates to a track type wall roll-up screen among portable screens for projection, and more particularly, to a wall roll-up screen wherein the screen can be used and portable with ease by attaching a magnet assembly to both sides of a lower rod of the screen.

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### **BACKGROUND ART**

In a conventional wall roll-up screen as shown in FIG. 1, it is necessary to roll up the screen 10 around a lower rod like a scroll and to tie the screen with string 11 so as to reserve it, and to untie the string 11 to use the screen 10.

15 And, when a user wishes to carry the screen, the user has to tie it with the string 11, which is troublesome. Especially, in this case, a surface of the screen where the string is tied has some wrinkles and edges of the screen can be loosish since the upper and lower rods are wrenched mutually. Besides the problems described above, the beauty of product is deteriorated in appearance.

20

### **DISCLOSURE OF INVENTION**

The present invention has been made in view of the above problems, and it is an object of the present invention to provide a wall roll-up screen among portable screens for projection, especially, a wall roll-up screen wherein

the screen can be used and portable with ease by attaching a magnet assembly to both sides of a lower rod of the screen.

5           According to the present invention for achieving the object, there is provided a wall roll-up screen wherein a screen is attached between upper and lower rods and the screen can be rolled up by the lower rod, wherein groove shaped rings processed with a magnetic material such as steel are attached on left and right ends of the upper rod of the screen and magnets is  
10       coupled on left and right ends of the lower rod of the screen, so that the screen is rolled up and then the magnets of the left and right of the lower rod are coupled with the groove shaped rings of the upper rod when the screen is carried, and the magnets and the groove shaped rings are separated when the screen is used.

15           Preferably, the groove shaped rings have grooves where the magnet can be coupled with the inner part of the groove shaped rings.

          Preferably, separate attachment units are attached on the wall in the rear part of the upper and lower rods, and the attachment units are coupled with the upper and lower rods of the screen so that the screen is stably and fixedly  
20       attached to the wall.

          Preferably, the groove shaped rings of the upper rod and the magnets of the lower rod can be exchanged in their positions.

## BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects and features of the present invention will  
5 become apparent the following description of preferred embodiment of given in  
conjunction with the accompanying drawings, in which:

FIG. 1 is an explanatory view of a wall roll-up screen in the art;

FIG. 2 is an explanatory view of an external shape of a screen in  
accordance with the present invention;

10 FIG. 3 is an explanatory view of a magnet of a screen in accordance  
with the present invention;

FIG. 4 is a detailed explanatory view of a magnet of a screen in  
accordance with the present invention;

15 FIG. 5 is an explanatory view of a magnet contact of a screen in  
accordance with the present invention;

FIG. 6 is an explanatory view of a screen of the present invention when  
the screen is applicably used;

FIG. 7 is an explanatory view of a screen of the present invention when  
the screen is fixedly used with a stand; and

20 FIG. 8 is an explanatory view of a construction of a screen in  
accordance with the present invention when the screen is applicably used.

## BEST MODE FOR CARRYING OUT THE INVENTION

The present invention will now be described more fully hereinafter with

reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in different forms and should not be construed as limited to the embodiments set fourth  
5 herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. In the drawings, like numbers refer to like elements throughout the specification.

10 The screen of the present invention can be used and portable with ease by attaching a magnet assembly to both sides of a lower rod of the screen. When the screen is used, the lower rod 2 is separated from an upper rod 1 of the screen 3 to be extended. And, when the screen is carried, the screen 3 is rolled up and the upper and lower rods 1 and 2 are attached each other so that  
15 it is convenient to carry the screen without any damage on the surface of the screen and there is no distortion of the upper and lower rods of the screen in the right and left directions.

Referring to FIGS. 2 and 3, the present invention has the upper and lower rods 1 and 2, and the screen 3 is attached between the rods 1 and 2 so  
20 that the lower rod 2 is rolled up when the screen is moved and the rod 2 is extended when the screen is used.

Groove shaped rings 4 are attached to right and left sides of the upper rod 1, which is made of steel or the like responding to a magnetic property, and magnets 5 are attached on right and left ends of the lower rod 2.

Such a construction may be changed, that is, the groove shaped rings 4 and the magnets 5 of the upper rod 1 and the groove shaped ring 4 may be exchanged in their positions.

As shown in FIG. 6, a well known attachment unit 6 such as a rubber adsorption plate or a snap button which can be attached and separated easily may be coupled in the rear part of the upper rod 1. And, a groove shaped ring 4 is constructed in the rear part of the lower rod 2, which is separated from the lower rod 2, and there is an attachment unit 7 behind the lower rod 2.

There exist grooves into which magnets having L or U shape can be inserted in the middle of the groove shaped rings 4.

Referring to FIG. 7, a known screen support 8 can be coupled and used fixedly in answer to a need, and the screen 3 may be a projection screen of roll shape.

Referring to FIG. 8, a support 9 forming an insertion unit 10 into which the lower rod 2 is inserted is constructed on both ends of the upper rod 1, the groove shaped ring 4 formed of steel is constructed as a portion of a circle, and a handle 11 is constructed on both ends of the magnet of the lower rod 2.

The upper and lower rods 1 and 2 are extended when the screen is used, as shown in FIG. 2a. And, when the screen is portable and carried, the screen attached to the lower rod 2 is rolled up around the lower rod 2 and then the magnets 5 attached to the right and left ends of the lower rod 2 are attached to the groove shaped rings 4 formed of the steel which are attached to the right

and left parts of the upper rod 1.

Referring to FIG. 4, the screen of the present invention has an  
5 increased attachment effect by coupling the magnets 5 to the inner groove  
areas of the right and left parts of the upper rod 1.

That is, as shown in FIG. 5, groove shaped rings 4 and magnets 5 on  
both ends of the upper and lower rods 1 and 2 of the present invention should  
be of circle shapes since the upper and lower rods 1 and 2 should be adhered  
10 closely each other after the screen 3 is rolled up around the lower rod 2.

In case that the grooves 4 and magnets 5 on both ends of the upper  
and lower rods 1 and 2 are formed of circle shape only, the coupling contact A  
becomes very small as shown in FIG. 5a so that the upper and lower rods 1 and  
2 are easily separated with small force.

15 However, in case that there are grooves in the groove shaped rings 4  
which can be coupled with the magnets 5 as shown in the present invention,  
since the coupling contact B is extended to the right and left parts of the  
magnets and to the front and rear parts of the groove shaped rings 4, the  
coupling forces of the magnets 5 and the groove shaped rings 4 can be strong.  
20 Additionally, since the magnets 5 of the lower rod 2 which are coupled with the  
right and left ends of the groove shaped rings 4 are not twisted in the right and  
left directions, the extension of the screen in its right and left parts can be  
protected.

Also, as shown in FIG. 6, since the screen of the present invention is

conveniently installed on the wall when the attachment unit 6 is coupled with the rear part of the upper rod 1 and the upper rod is coupled with the lower rod by the magnets 5 when the lower rod 2 is rolled up, there is no damage on the screen at all.

Also, as shown in FIG. 8, the lower rod 2 which is inserted into the insertion units 10 on both ends of the upper rod 1 has magnets 5 on its groove shaped rings 4 so that there is an effect that both rods do not apart from each other, and the screen 3 of the lower rod 2 is stably rolled up to be carried when the lower rod 2 is rolled up by turning the handle 11.

## INDUSTRIAL APPLICABILITY

In accordance with the present invention, it is convenient to roll up a screen itself of a front screen or a projection screen or to extend it, to maintain its beauty of appearance without tying the screen with string, to attach it to a wall or a ceil simply, to fix it in order that the screen 3 is not shaken, and to carry it stably since upper and lower rods 1 and 2 are not twisted.

When the screen of the present invention is used, the groove shaped rings 4 are attached to the attachment units 6 behind the lower rod 2 and the magnets 5 of the lower rod 2 are attached to the coupling attachment units 7 which have been attached to the coupling wall rear already so that the screen is used as portable, home and conference screens.



## CLAIMS

### What is claimed is:

5           1. A wall roll-up screen wherein a screen is attached between upper  
and lower rods and the screen can be rolled up by the lower rod, wherein  
groove shaped rings processed with a magnetic material such as steel are  
attached on left and right ends of the upper rod of the screen and magnets is  
coupled on left and right ends of the lower rod of the screen, so that the screen  
10 is rolled up and then the magnets of the left and right of the lower rod are  
coupled with the groove shaped rings of the upper rod when the screen is  
carried, and the magnets and the groove shaped rings are separated when the  
screen is used.

15           2. The screen according to claim 1, wherein the groove shaped rings  
have grooves where the magnets can be coupled with the inner part of the  
groove shaped rings.

          3. The screen according to claim 1, wherein separate attachment units  
20 are attached on the wall in the rear part of the upper and lower rods, and the  
attachment units are coupled with the upper and lower rods of the screen so  
that the screen is stably and fixedly attached to the wall.

          4. The screen according to claim 1, wherein the groove shaped rings

of the upper rod and the magnets of the lower rod can be exchanged in their positions.

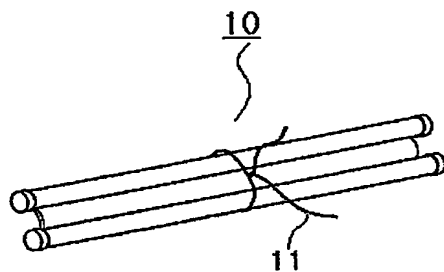
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PRIOR ART

FIG. 1

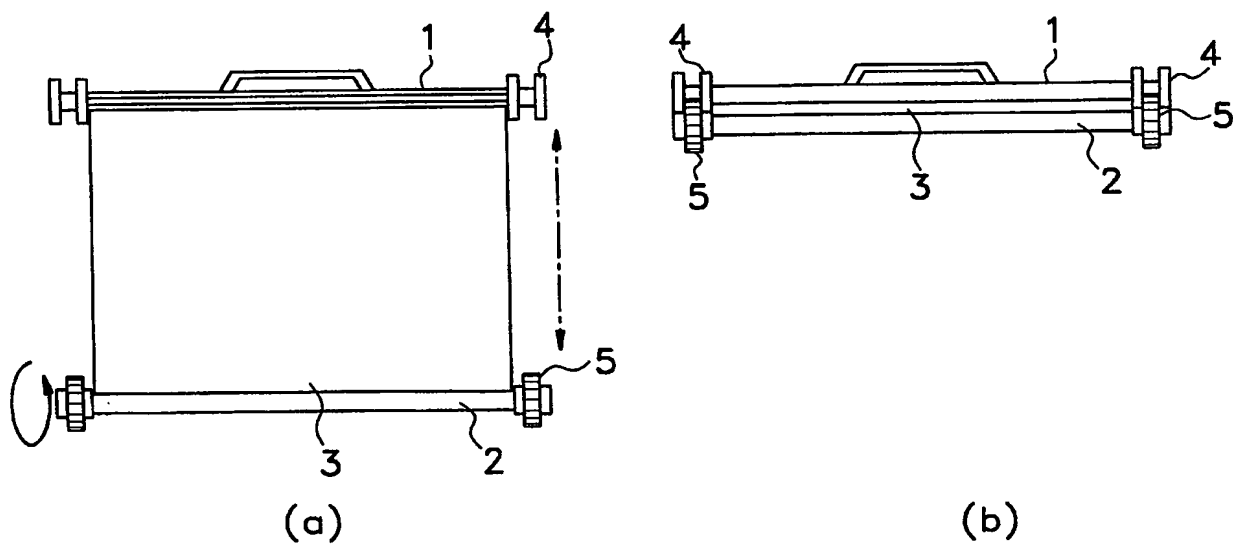


FIG. 2

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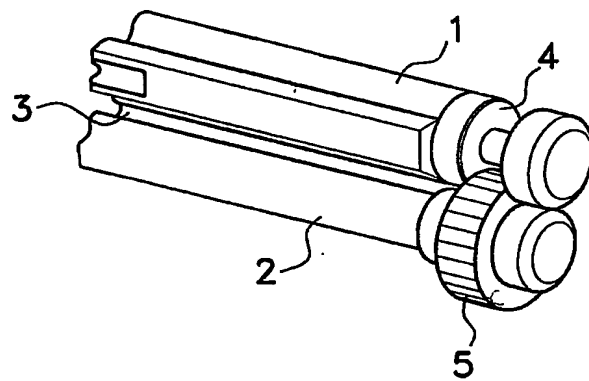


FIG. 3

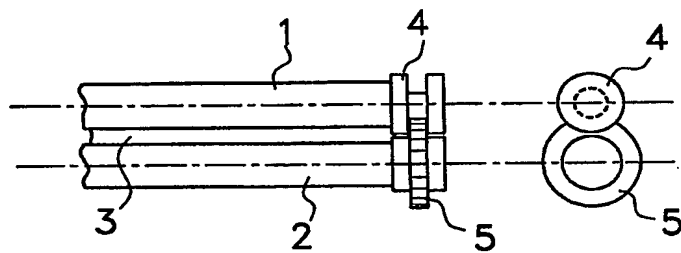


FIG. 4

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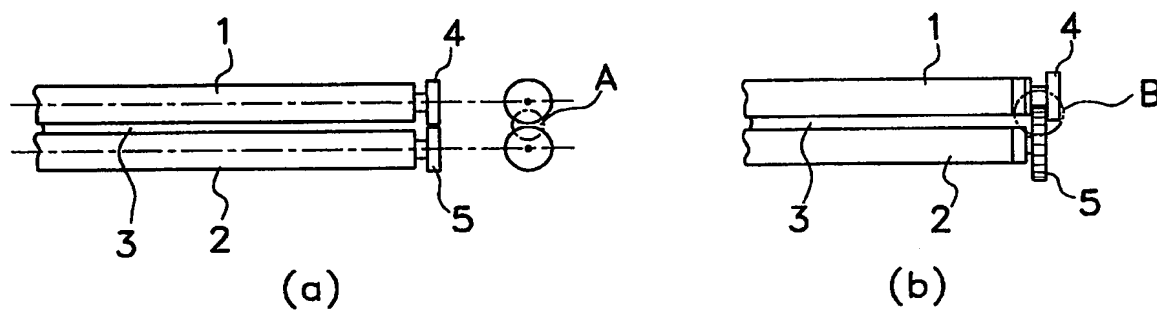


FIG. 5

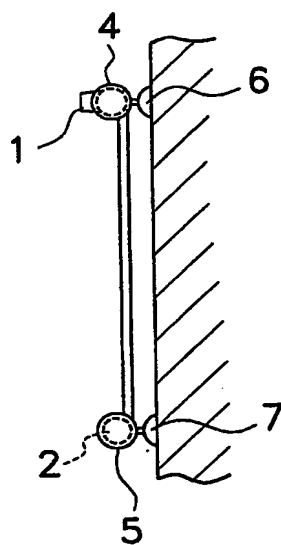


FIG. 6

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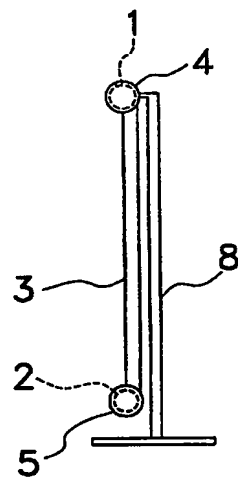


FIG. 7

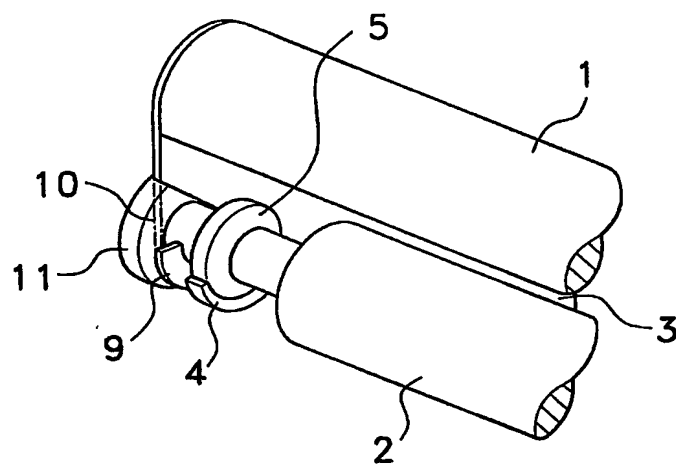


FIG. 8

# INTERNATIONAL SEARCH REPORT

International application No.  
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> <b>IPC7 G03B 21/56</b> According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC7 G03B 21/56 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean Patents and applications for inventions since 1975 Korean Utility models and applications for Utility models since 1975 Japanese Utility models and applications for Utility models since 1975 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKIPAS		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 11-142974 A (IZUMI) 28 May 1999 paragraph 30, Fig.9, 11	1, 2, 4
A	US 5,581,401 A (TAKAMOTO ET AL.) 3 December 1996 column 4, line 5 - 23	1, 2, 4
A	KR 1998-027358 U (Kim Ki Young) 5 August 1998 abstract, Fig.1	3
<div style="display: flex; justify-content: space-between;"> <span><input type="checkbox"/> Further documents are listed in the continuation of Box C.</span> <span><input type="checkbox"/> See patent family annex.</span> </div> <div style="display: flex; justify-content: space-between; font-size: small;"> <div style="width: 48%;"> <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 48%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> </div> </div>		
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